The Small Business Innovation Research (SBIR) Program - Issues and Questions

Testimony Submitted to the House Science Committee

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November 12, 2003

SUMMARY

The Small Business Innovation Research (SBIR) program was established by an Act of Congress in 1982. It was renewed and extended in 1992. Most recently, without any substantive debate or legislative attention, a renewal was put in place under omnibus legislation late in the 2000 session. The collective legislation may be found in 15 USC 638.

A great many problems and issues have developed over the 20-year life of the SBIR program. Some of these have been addressed, but many have not. This paper is an attempt to collect fact-based information, and also to give my views as one who has experience as an SBIR Principal Investigator, chief executive of a support service provider company, and a 20-year history as a researcher and program manager at a National Laboratory operated by the world's largest contract R&D nonprofit.

Issues highlighted below will be separately addressed in my report and commentary:

- Lack of uniformity in procedures for payment between SBIR Agencies creates serious cash flow problems for small businesses, which are especially disruptive on the short timeline Phase I projects.
- Some Agencies award Grants, which simplify reporting and establish expedient payment schedules. Others are bound by law to operate solely by means of Contracts, imposing excessive bureaucratic systems, auditing requirements and administrative delays on small business innovators.
- Emphasis by the Congress and by some evaluators of the SBIR program have focused on *Commercialization* as the sole measure of program success. At the same time, other purposes of the original legislation are being ignored. Paradoxically, authority to promote and *assist* commercialization is being ignored. The purposes and achievements of the 1982 Act need to be revisited and measured more broadly.
- The SBIR program is funded by a 2.5% 'tax' on extramural research budgets of participating Agencies. Some regard this as little more than legalized theft. In addition, the current law specifies that NONE of the 2.5% SBIR tax can be used for administrative costs of the SBIR program. Thus, any activity by Agency SBIR Representative Offices must be taken from the Research budgets of the Agencies, a *de facto* additional tax, further fueling resentment of the SBIR program within the Agencies.
- Restrictions on use of funds by Awardees and by the Agencies themselves create some resentments and tensions, as noted with administrative cost restrictions. In addition, there is language specifically forbidding use of SBIR award funds for "marketing". Some Agencies

have interpreted this to exclude commercialization technical assistance otherwise spelled out in 15 USC 638, added in 1992.

- Some more Conservative legislators view the SBIR program as intrinsically unfair, as it gives support to some companies and not others. The interpretation is that this is tantamount to restraint of free competition. These arguments need to be reviewed, and considered in the context of other types of federal R&D Awards, which are selective and exclusive as well. Whether this discussion in undertaken in the broad context of the federal role in basic and applied research, or focused solely on the SBIR program, more debate and fact-finding is indicated.
- The impact of SBIR "taxation" on Agency R&D budgets has been minimized to the extent possible by exclusions of "taxable" categories (e.g., nuclear weapons R&D expenses of the Department of Energy). In addition, Agencies have, with varying success, redirected funds back to their conventional R&D performers within Academia, at federal laboratories, and at larger nonprofit research centers. This may be formalized, as with the STTR program added in 1992, or through less formalized review processes (e.g., at NSF or NIH) favoring small business proposers who siphon off up to 40% of funds to academic partners. This effectively provides a "tax cut" to Agencies, but reduces funds to the Small Business innovator, and may also create failure due to delays or nonperformance by academic or other partners.
- Restrictive language on intellectual property, reserving royalty-free patent use for the government and/or requiring up-front intellectual property agreements between Small Business innovators and collaborating institutions in Academia, Federal Laboratories or nonprofit research institutions, creates restrictions on Small Business freedom to negotiate licenses, and also calls into question the value of exclusive licenses in some types of market. These restrictions affect practical implementation of licensing campaigns and thus degrade merchantability of intellectual property.
- No SBIR Agencies presently exercise the discretionary authority to provide Technical Assistance to Phase I SBIR Awardees.
- No SBIR Agencies allow Phase II SBIR Awardees to freely select technical assistance providers as spelled out in law in 15 USC 638.
- A number of Agencies (Dept of Energy, Dept of Defense, USDA and perhaps others) have gone around the provisions for Technical Assistance in the existing law, and have awarded commercialization assistance support contracts to politically well-connected companies on a noncompetitive basis. This inappropriately frustrates the intent of the law, and appears to violate the provisions in the Technical Assistance language calling for competitive solicitation of vendors.
- A premise of the 1982 Act was that Small Business did not have adequate access to federal R&D opportunities. The SBIR program helps provide this access, and can play a continuing role in bringing new Small Business innovators to the funding table. Some of these performers, given success and diligence, should rise above the radar and become part of the recognized R&D resource for the Agencies. They should be able to compete and succeed in the normal R&D marketplace on their established merits, and might at some point be restrained from competing with newer companies or small firms that have not had the benefit of R&D awards through SBIR. This "graduation" into conventional R&D procurement would benefit the Agencies in establishing improved means of contracting with small companies, and keep the SBIR program open to new performers. There is legislation criticizing repeat SBIR performers and requiring that they report commercial successes, but

the implication is that they will simply be rewarded by preferential capture of more SBIR Awards. This approach does not meet the initial 'high risk' concept of SBIR funding, nor the goal of attracting new Awardees and building the number of job-creating small companies.

- Legislative changes to clarify ambiguities in the law, and to require Agencies to open solicitations for technical assistance vendors to a larger pool are necessary. Further, the purposes of the SBIR program need better articulation, and metrics beyond commercialization need to be added to reporting on the results. A report on the SBIR program was mandated in the 2000 legislation, but this seems to be proceeding on a slow clock through the NAS. A broader collection of information and an informed debate in the Congress to improve the SBIR program should begin now. Twenty years is long enough for meaningful experience to have accumulated, and we need to use the experience to get a better return on our national investment.

LACK OF UNIFORMITY IN PROVISION OF FUNDS AND MEETING PROMPT PAYMENT NEEDS FOR SMALL BUSINESS

We first became involved with the SBIR Program in 1992, by winning a Phase I Award through the Defense Advanced Research Projects Agency. As this project was through the Department of Defense, the Agency was obligated by law to make the Award as a Contract, under the full provisions and majesty of the Federal Acquisitions Regulation (FAR) Code. There were at the time two of us involved in running the company and conducting all administrative work along with R&D. Protocols for payment under this arrangement called for communications across three states and multiple federal centers for contract monitoring and invoicing for payments. Our company of two was obligated to provide information to 13 Contacts across the Department of Defense in order to resolve delayed payments. In spite of this complexity, our experience was marked by perpetual delayed payments, making it difficult for us to meet financial obligations and complete the work on the six-month schedule.

Our second experience was a Phase I Award from the National Science Foundation (NSF). Under law, NSF operates on a Grant basis, and established a simple, quick payment scheme that allowed us to successfully complete the Phase I project without administrative delays or cash flow disasters.

The lesson for us and from others we have spoken with is that ALL SBIR Awards should be Grants, and administrative complexity for payment needs to be taken away so that cash flow needs of small company Awardees can be managed.

The payment pattern of NSF, which we found to be exemplary, should be made uniform for Phase I Awardee grants, i.e., One-third on the date of the Award, one-third at the end of the first quarter (half-way through the six month performance period), and one-third on delivery of the Final Report by the Awardee.

ADMINISTRATIVE DIFFICULTY IMPOSED BY FAR CODE MANAGEMENT OF R&D AWARDS AS CONTRACTS RATHER THAN GRANTS

The administrative difficulty of Contracts substantially increases at the Phase II stage, requiring audits, use of specific accounting systems and other regulatory compliance more suited to the delivery of cargo aircraft than to the conduct of applied research and development. Complex formulae for generation and justification of overhead rates under FAR procedures require detail that may not be available for early stage companies, and the result may be ineffective in development of an understanding on how funds will actually need to be expended.

If the Contract approach to SBIR projects cannot entirely be abandoned, it would be well to focus with more clarity on the provisions for R&D performance now in the FAR, rather than handling the Awards like hardware procurement. Authorizations and permissions clauses, isolating SBIR Awardees from patent infringement litigation in the performance of R&D do need to be retained in any Grant or Contract Agreements uniformly across all awards.

CONFUSION ON PURPOSES AND OVEREMPHASIS ON COMMERCIALIZATION TO THE EXCLUSION OF OTHER FACTORS

The SBIR program was originally conceived of as a way to improve access by small business to federal R&D support. The basic idea implies reciprocity, wherein the federal Agencies that fund extramural R&D enlarge their well of innovative ideas by soliciting the input of the notoriously creative Small Business sector.

So, in the context of national R&D objectives managed through federal departments and Agencies, the work solicited from Small Business through the SBIR Program merely extends the resources for solution of established research needs to a larger family of performers.

It is a fact of life that most early research either fails due to some unanticipated technical problem, or at best serves as the starting point for further work based on a better understanding. This is the fundamental nature of experimental science.

Added to the basic nature of science is the basic nature of money and investment, which is that investors are averse to risks, and capital is not ordinarily available for innovations where feasibility has not been clearly shown, and performance characteristics (as well as costs) remain to be determined.

The SBIR program was originally conceived as dealing with the unavailability of capital for early stage development, as well as for meeting the needs of federal Agencies for screening of new ideas through R&D unlikely to be funded through the private sector.

This set of realities and purposes should make several factual matters clear. These include:

1. It is NORMAL for the majority of technical feasibility experiments to fail.

2. Interests of Agencies may shift with their missions, and leave even proven technology without the expected federal market.

3. Certain technologies, in spite of the buzzwords for 'dual use' technology, may have no civilian marketplace at all, or may be so expensive as to be noncompetitive in the commercial sector.

So, it is far from unusual for a Phase I project to end as a failed experiment in its original context, but rather serve as a point of departure for another Phase I based on an informed set of findings and expectations. This is not a failure, but science and technology as usual.

In our experience, interests of Agencies can shift, leaving even feasible ideas without necessary support. In the case of our work on momentum control technology for spray cleaning of patterned wafers, the Agency decided to abandon support of research and leave this area of work to private industry. We were accordingly not able to move forward with Phase II work, in spite of technical success in Phase I through an NSF grant.

Specific goals of Agencies (e.g., mass production of target materials for inertial confinement fusion at the Department of Energy) do not, in the foreseeable future, call for a commercial market or justify capital investment by the private sector. The Department of Defense has numerous weapons refinement tasks without parallel in the commercial or civilian sector.

So, Commercialization alone as a metric is an oversimplification. Additional means of evaluating output of Phase I work in particular would include movement of knowledge allowing improved or redirected R&D project definition, the sharing of knowledge through presentation of work at professional societies, in trade journals or in proceedings of topical technical meetings, and of course placement of new knowledge in the public domain through the Patent system.

In part, the intent of the SBIR program was to develop an improved relationship between the federal R&D program and private small business providers of R&D services. We have had twenty years experience with this process. Some small businesses have established strong positions as R&D providers and do repeat business with Agencies. Others have grown beyond the size limitation criteria of Small Business and thereby "graduated" from the SBIR program. Whether it is appropriate for multiple Awardees to dominate competition with newer SBIR participants in light of other opportunities is a slightly different question, discussed later.

The point is that failure to commercialize, taken alone, is an inadequate measure of the quality of performance of individual SBIR Awardees, and also is an oversimplification in judging the impact and value of the broader SBIR program.

Some relief from Commercialization expectations in scoring proposals is in place at some Agencies, but these considerations and understandings are not uniformly extended across all ten SBIR Agencies.

RESTRICTIONS AFFECTING AGENCY PERCEPTIONS

Attitudes on the value or even morality of SBIR vary not only between Agencies, but within them.

The SBIR program is funded by a 'tax' on extramural research. This started with a relatively small base, and has expanded over the past 20 years to a rate of 2.5%. The size of the federal R&D budget has grown in constant dollars over this period, and in combination with the increased 'tax' rate has produced a growth in the SBIR program size from millions of dollars to its present level of about $1.6 billion.

However, the original language of the 1982 Act, which prevents the use of any of the specifically identified SBIR funds for administration of the program means that all such costs must come out of Agency funds *other than SBIR*, constituting a *de facto* increase in the "tax rate". It must be granted that these costs are not large, but the principle of expanding and increasing the support for SBIR Awardees at *any* expense to the main Agency R&D programs creates hard feelings. The present language in the Act restraining use of funds for administration needs to be revisited to moderate internal conflict and to support the expanding needs of what has become a large federal investment in innovation and economic development.

BASIC POLITICAL IDEOLOGY CONFLICTS ON PURPOSES

Under the pervasive rubric that government is bad, and that government involvement with private enterprise is bad, the SBIR program is seen as unfair competition to the private sector, in that government funds are used to support some companies and not others. We do not see an end to this ideology. The fact is that the government extends funds to larger companies to provide technical work, including applied R&D, and that competition between these companies leads to winners and losers.

The important consideration is to keep the competition for government funds open, and to have the process sufficiently transparent that it is seen as fair, and based on quality of the ideas and work offered by the SBIR Awardees.

The process of government involvement in the private sector, even when the intent is to procure technical advances in the national interest, will always be seen by some as an manifestation of inappropriate government intervention in the free market system. We should not expect these criticisms to go away.

It is important that the Small Business Committee in the House take an interest (and a protective, nurturing posture) with regard to preservation and improvement of the SBIR program. The sharing of that responsibility by the Science Committee puts the issues into a Committee dominated by academics, technology-based Agencies and larger corporate interests in the aerospace, biomedical and electronic industries. There are few stakeholders or stakeholder interests represented at the Science Committee that would be protective of Small Business Innovation interests. This is a serious weakness in the assignment of responsibilities for preservation and for perfecting of the SBIR program.

AGENCY BIASES REDIRECTING FUNDS TO TRADITIONAL CLIENTS

In addition to seeking exemptions on "taxable" portions of their extramural research budgets, Agencies have been finding creative ways to divert SBIR funds from the 2.5% tax back to their traditional awardees. The STTR program, which requires partnering with a nonprofit or academic organization, redirects a significant portion of SBIR Award funds to a small business "partner" in academia or at a nonprofit. Less formally, Agencies may give greater weight to small businesses who identify research collaborators at universities or federal labs, and SBIR funds are then accordingly paid back into these traditional Agency clients. These approaches have the effect of stripping funds below legislated limits, especially troublesome for Phase I efforts where Agencies themselves have set Award limits below amounts authorized by Congress. A further result is to create administrative and technical complexity, most troublesome in Phase I, wherein the Small Business has major responsibility, but may have little or no control or influence on researchers outside his own company (e.g., at a University in another state). The benefit of some of these forced collaborations needs to be weighed against the financial costs and research performance risks, but we have seen little evidence of understanding of problems created by the Agency postures in this regard.

RESTRICTIVE LANGUAGE IN SPECIAL PROGRAMS AFFECTING MECHANTABILITY OF INTELLECTUAL PROPERTY

A variation on SBIR, such as STTR, and some other federal programs, force small businesses into collaborations with academic institutions, large nonprofits or federal labs, and in addition to diversion of funds often require advance agreement on intellectual property. Also, it is common under FAR Contract codes for the government to reserve royalty-free use of intellectual property for itself. The larger institutional partners who are given front end participation in intellectual property ownership and control are generally staffed with experts to protect and defend their own interests, and commonly bring levels of complexity and/or delay to licensing or sale of intellectual property. Restrictions, reservations and clouded ownership of intellectual property adversely affect its merchantability, and the freedom of the small business innovator to achieve a timely reward for his own creativity. All of these issues, embedded in the SBIR legislation as well as other federal laws on IP ownership, need to be studied and revised to free up merchantability and maximize value for small business innovators.

FAILURE TO EXERCISE DISCRETIONARY AUTHORITY FOR TECHNICAL ASSISTANCE TO AWARDEES

Provisions in the 1992 Renewal of the SBIR program are codified in 15 USC 638. In 1992, Congress gave SBIR Agencies the discretionary authority to provide supplemental funds in the amount of $4,000 for certain specific types of Technical Assistance to Phase I Awardees. Vendors for such Technical Assistance services must be selected by competitive means, and contract duration is limited to three years.

Ten Agencies have had this discretionary authority to help Phase I Awardees with Technical Assistance, which clearly is intended to guide them away from technical mistakes, improve access to scientific information, and to have a better chance of commercial success. Of the ten Agencies, only one (EPA) has solicited proposals from Vendor candidates, awarded a three-year

contract through open competition, and provided the Technical Assistance for Phase I Awardees in compliance with the specific terms of 15 USC 638.

None of the other nine Agencies have provided Phase I Technical Assistance as spelled out in the law. So far as we can determine, the Congress has never requested a report on how they have used the Technical Assistance authority, nor asked for an explanation of why it has not been used.

100% of the need for Phase I Awardee Technical Assistance presently is unmet. This is clearly not the intent of 15 USC 638.

LAW ON ALLOWABILITY OF EXPENSES FOR TECHNICAL ASSISTANCE

With regard to Phase II Awardee Technical Assistance, 15 USC 638 specifically states that the same categories of Technical Assistance may be sought by the Awardees, and that expenses for such services, taken from the basic Award funds by the Awardee, shall constitute allowable expenses in the amount of $4,000 per year over the 24-month Phase II duration (e.g., a total of $8,000).

So far as we know, no Agency makes this provision in Phase II performance known to proposers of Phase II follow-on work to successful Phase I projects. This information is not provided at National or Regional SBIR Workshops, nor is it to be found on Agency websites or in Agency proposal preparation materials.

INAPPROPRIATE SUBSTITUTION OF NONCOMPETITIVE CONTRACTS FOR TECHNICAL ASSISTANCE TO INSIDER COMPANIES, BY-PASSING LEGISLATION IN 15 USC 638

As seen in the foregoing summary discussion, none of the Agencies have made the Technical Assistance provisions in the SBIR legislation known to Phase II Awardees (or to Phase I Awardees who are preparing Phase II proposals).

Rather, starting with DOE, Agencies (now several) have placed Technical Assistance work for Phase II Awardees, dealing with commercialization assistance, with two companies:

- Dawnbreaker, which provides conventional business plan development tutoring
- Foresight Science & Technology, Inc., which provides a summary report on prospects for market development of a new technology application.

Again, so far as we can tell, this Phase II Technical Assistance activity by the Agencies has been conducted in a noncompetitive, closed way. Also, the choices of Phase II Awardees for other sources of technical support do not appear to be allowed, much less encouraged, as would seem to be the intent of the existing law (15 USC 638).

So far as we can tell, Congress has never asked the SBIR Agencies for a report on Phase II Technical Assistance, nor to provide any accountability on whether these activities follow either the letter or intent of the law.

The limitation of Phase II Technical Assistance to two companies, without publication of the opportunity or open competition has the result of stifling competition of ideas by potential service providers, but more importantly means that about 95% of the need for Technical Assistance for Phase II Awardees remains unmet.

FAILURE TO MOVE SUCCESSFUL SMALL BUSINESSES OUT OF THE SBIR COMPETITION AND INTO NORMAL PROCUREMENT CHANNELS

One important idea embedded in the origin of the SBIR program in 1982 was that federal Agencies did not know how to access the innovation and quality of thinking available through small businesses. From the Small Business side, there was in general little knowledge of how to find out the research needs of Agencies, or how to capture a share of funding to pursue these needs. Over the intervening period of 20+ years, the SBIR program has given both small companies and Agencies the opportunity to develop business friendships. Some small businesses have become large businesses. Some Agencies have developed repeat relationships with innovative small companies, both for conduct of applied development, and for the procurement of other types of goods and services. Special legislation for Small Business set asides and other mechanisms outside the SBIR program have improved the access of Small Business to federal procurement opportunities, and have also improved the Agencies' access to Small Business innovation and creativity.

There have been amendments and changes to the SBIR legislation that are reflective of a concern that Small Businesses with multiple awards are somehow subject to blame or criticism for failure to commercialize technology. There may be some merit to the criteria of judging purpose by an apparent disinterest in commercialization, but the issues are broader and more complex than this simplified criterion recognizes.

There is a need for companies to "graduate" from the SBIR program and make room for new participants. It is easier to make an award to a performer who has done well technically and has learned how to handle administrative details of reporting both the scientific and financial status of his project. To a degree, some Agencies sanitize proposals by removing the names of proposers, and by turning reviews over to external review committees. Generally, in the case of prior performers, their earlier experiences and accomplishments are still apparent, and give an advantage.

The situation is a bit like the premise that SBIR is early funding of ideas in advance of sufficient risk reduction to attract conventional venture investment or financial institution loans. Once an SBIR Awardee company has established itself as a reliable performer, technically and administratively, it would seem reasonable that direct participation in Agency R&D procurements outside the SBIR program should be entirely possible. Special access through SBIR solicitations and normal SBIR competition channels should no longer be needed.

So, the question is not simply whether a company is an "R&D Mill" or not -- there are lots of entirely respectable R&D centers at Universities and Nonprofits that never commercialize anything , but rather move the culture forward by creating or formalizing knowledge. A

company could continue to emphasize R&D, meeting the needs for innovation and knowledge of the Agencies, and could do so as an extramural R&D vendor to the Agency.

But, my impression is that movement of repeat companies into a more direct relationship with Agencies as providers of applied research, and as "graduates' of the SBIR program isn't really happening to the extent that it might. This sustains a higher percentage of repeat Awardees than might otherwise be the case.

The design of SBIR is for a three-phase process. Phase I being focused on technical feasibility, Phase II being more extensive reduction to practice and refinement over a longer work period with more funds, and Phase III stepping beyond the SBIR resources to obtain funding through the normal procurement channels of the Agencies, or through private sector commerce. Although a legitimate interest, the private sector commerce has taken up a disproportionate amount of attention and qualifying language.

Three elements need to be balanced to understand the achievements of Awardees, and these are actually of equal weight:

- Does the Phase II work lead to sales to the Agencies outside the SBIR program (i.e., normal procurement channels)?
- Is there sufficient private sector interest to produce an active strategic partnership and private investment for commercialization?
- Do the scientific results of the Phase II work increase knowledge in the public domain (as evidenced by patents and/or technical publications)?

We discussed the importance of developing knowledge in the public domain as part of the earlier section dealing with overemphasis on commercialization as a measure of the SBIR program. The topic here is really focused on the success as measured by 'graduation' to Phase III, which is a phenomenon needing more holistic attention.

LEGISLATIVE CHANGES OR CLARIFICATIONS NEEDED

Clarify Multiple Technical Assistance Vendor Authority

In a finding made by the prior SBIR Administrator at SBA, legislation on Technical Assistance in the 1992 Renewal Act was described as "flawed", under an interpretation that Agencies must select a single vendor for provision of Technical Assistance to Phase I Awardees. Many Agencies have taken the position that a single-vendor requirement makes implementation of Phase I Technical Assistance impossible. This is clearly apparent with the number of Phase I Awards made by larger Agencies. The table below illustrates the scale of the problem for using a single vendor to perform all cases over a short time frame.

The assumption in the Table is that a single case manager, working over a typical performance period of six weeks, might (on the average) complete three cases. Some can do less, some more. In the case of larger Agencies, no single service organization on the planet can be expected to handle the collective caseload in the time available. The "single vendor" interpretation is absurd on the face of it, and Congress needs to assert and/or clarify authority to use multiple vendors.

YR 2000 Phase I Awards by Agency

Agency	Number of Phase I Awards	TA Staff Needed
DOD	1381	460
DOE	292	97
NASA	420	140
HHS	1231	410
NSF	320	107
DOT	23	8
EPA	58	19
DOA	125	42
DOC	40	13
TOTALS	3890	1297

Make Inflationary Adjustments on Allowable Funding for Technical Assistance

Specific dollar amounts for Phase I supplementary funding for Technical Assistance are in 1992 dollars. The dollar amount should be adjusted for the subsequent 10+ years of inflation, and in a better fix, the new limit should be expressed as a percentage, rather than a fixed amount.

Require an accounting from Agencies on their performance under the Technical Assistance provisions in 15 USC 638.

Only one Agency has provided Phase I Technical Assistance as spelled out in 1992 law. This is EPA. They can report their success with three years of experience, and can also (perhaps) account for why they have abandoned this support. Other Agencies which have *not* provided Phase I Technical Assistance under the authority of 15 USC 638 should be asked to explain why not, and further asked to provide information to the Congress on actions it might take to enable the Agencies to move forward.

Clarify the Content and Structure of an objective report to Congress, required by the 2000 Act.

The NAS has been given the task of preparing a report to Congress on the SBIR program. I believe it is important that the Congress make clear that the report needs to include consideration of the laws affecting award type (i.e., grant versus contract), complexity of administration, promptness of payment and management of intellectual property.

I have not been contacted by the NAS as part of their assigned work, and several attempts to establish a dialog with the NAS Principal Investigator have been ignored. I am generally not impressed with the NAS, which seems a poor substitute for the earlier technology advisory organization dissolved by the 1994 Congress after 25 years of exemplary service to the Congress and to the country. Failing revival of this more diligent technical analysis capability within the Congress, it is important for the Congress to clarify their requirements to the sole contractor, NAS, and make sure the slowly developing report has some real substance and utility.

The award of additional contracts to look at the SBIR program might be beneficial in getting a second, third or fourth opinion.

Reporting on Phase II Technical Assistance Authority should be required of the Agencies.

As discussed here, several Agencies appear to have by-passed the 1992 legislation and provided Technical Assistance to Phase II Awardees on a non-competitive basis, using two vendors.

Agencies should be required to report on how they have used the Phase II Technical Assistance authority in 15 USC 638 over the past 10+ years, and what alternatives they have used. Information on allowability of Technical Assistance expenses under Phase II, and the communication of the information to Phase II Awardees should be tracked and reported. In the event Agencies have *not* encouraged or allowed Phase II Awardees to select their own sources of Technical Assistance, Agencies should be required to explain why not.

Clarify restrictions on use of SBIR funds for marketing.

There is a tension between the allowability of expenses for commercialization Technical Assistance, and the statutory prohibition of use of SBIR funds for "marketing". The exclusion needs to be clarified so that it is seen as prohibitory of activities such as advertising or lobbying, as is the case with 501 c 3 non-profits. The allowability of explorations for business information, strategic partners and other commercialization can be clarified by specific language on what constitutes prohibited "marketing" activity.